STATE OF CALIFORNIA — Public Utilities Commission
San Francisco

M e m o r a n d u m

Date: April 2, 2013

To: The Commission
(Meeting of April 4, 2013)

From: Lynn Sadler, Director
Office of Governmental Affairs (OGA) – Sacramento

Subject: **AB 1228 (Perez, V. M.) – Electricity: Eligible Fuel Cell Customer-Generators. As introduced: February 22, 2013**

RECOMMENDED POSITION: SUPPORT IF AMENDED

SUMMARY OF BILL:

This bill would increase the maximum allowable size of customer-sited fuel cells which receive service under Net Energy Metering (NEM) tariff from one megawatt to three megawatts.

CURRENT LAW:

Public Utilities (PU) Code 2827 established the NEM tariff, which provides bill credits for energy produced from a distributed generation (DG) system. PU Code 2827.10 defines "eligible fuel cell customer-generator" as a fuel cell, sited on the customer's side of the meter, sized to meet onsite load, which is no more than one megawatt in rated capacity.

AUTHOR'S PURPOSE:

The bill intends to support further deployment of customer-sited fuel cells by allowing fuel cells greater than 1 MW to benefit from NEM bill credits and exempting them from interconnection costs.

DIVISION ANALYSIS (Energy Division):

There are currently two different types of NEM tariffs in place: one tariff offers bill credits at the full retail rate for RPS-eligible technologies, including fuel cells that use renewable fuel ("full-retail NEM"). The program cap for this tariff is currently 5 percent of an electrical corporation's aggregate customer peak demand. A separate tariff, the subject of this bill, offers a significantly lower bill credit that pays for the generation-only component of the rate, available to fuel cells that use renewable or non-renewable fuel and which meet specified reductions in GHG emissions ("fuel cell NEM"). The program

cap for the fuel cell NEM tariff is 500 MW statewide. To be eligible to receive service under either NEM tariff, DG facilities – including fuel cells – cannot have a cumulative rated capacity that exceeds 1 MW.

The Self Generation Incentive Program also provides incentives to participating DG customers in order to encourage the deployment of clean DG technologies that have been determined to achieve reductions in GHG emissions. Fuel cells that operate on renewable fuels and fuel cells that operate on non-renewable fuels are eligible to participate in SGIP. The SGIP remains heavily subscribed and offers incentives for the first 3 MW of fuel cell projects, which can be of any size (e.g. a 10MW fuel cell receives financial support for the first 3MW).

Like SGIP, the NEM tariff encourages the deployment of clean DG technologies by providing bill credits for the electricity generated from the fuel cell system. Provided a system meets all requirements, both renewable and non-renewable fuel cell systems could potentially participate in the SGIP and the fuel cell NEM program. In 2011, renewable fuel cells became eligible to participate in the full-retail NEM program.[1] Because renewable fuel cell projects will likely take advantage of the higher bill credit rate under the full-retail NEM program, staff assumes that the majority of current fuel cell projects using the fuel cell NEM tariff will be non-renewable fuel cells.

In 2011, a CPUC report on the cost-effectiveness of DG technologies within the SGIP found that, of all technologies, fuel cells have the highest projected cost reductions between now and 2020.[2] Further, SGIP is designed with a declining incentive structure, with a 10 percent annual reduction in incentives for fuel cells beginning January 2013. NEM benefits will be an important economic consideration for new fuel cell projects as SGIP incentives taper off in later years. The installation of fuel cells under the fuel cell NEM tariff may represent a significantly lower marginal cost to ratepayers than the full-retail NEM program - since bill credits at the generation-only rate do not include the cost for use of the transmission and distribution (T&D) system, the costs for public purpose programs, and other bundled costs, whereas bill credits under full-retail NEM include all bundled costs.

The cost of interconnecting a DG facility varies greatly depending on the size of the system. Smaller systems, less than 1 MW, typically incur lesser interconnection costs than larger systems of 1 MW and greater, because smaller systems rarely require a supplemental review and additional studies to ensure safe interconnection to the grid. The cost of a supplement review for a Non-NEM DG customer is $2,500. If a detailed study is needed, then the non-NEM DG customer is required pay $10,000 -$15,000.[3]

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[1] Senate Bill (SB) 498 (Wolk, 2011) expanded the technologies eligible to participate in the full-retail NEM program to RPS-eligible technologies, including fuel cells that use renewable fuels.

[2] The 2011 SGIP Cost-Benefit study is available here: http://www.cpuc.ca.gov/NR/rdonlyres/2EB97E1C-348C-4CC4-A3A5-D417B4DDD58F/0/SGIP_CE_Report_Final.pdf.

[3] Source: Pacific Gas and Electric Company's Rule 21 Tariff (available here: http://pge.com/tariffs/tm2/pdf/ELEC_RULES_21.pdf).

NEM customers are not required to pay supplemental review or detailed study costs, therefore those costs must be recouped by ratepayers. By increasing the per-project cap for NEM fuel cell systems to 3 MW, this bill may increase the risk of shifting significantly higher interconnection costs to non-participating ratepayers.

Studies on the impacts of NEM to ratepayers have been focused on the full-retail NEM tariff for systems under 1 MW.[4] Because the ratepayer impact of increasing the per-project fuel cell NEM cap to 3 MW is unknown at this time, staff recommends modifying the bill to remove the exemption from interconnection costs for NEM-participating fuel cell projects over 1 MW and instead require that these larger facilities pay for the costs of interconnecting to the grid.

SAFETY IMPACT:

This bill would maintain the interconnection standards required of customer-sited fuel cells in IOU territories.

RELIABILITY IMPACT:

As noted above, fuel cells installed under the NEM tariff would be subject to current interconnection standards to ensure grid reliability.

RATEPAYER IMPACT:

By extending the generation-only component of NEM to fuel cells from the current cap of 1MW to 3MW, ratepayers may face additional cost burdens if the interconnection costs of installing these larger systems increases. Additional study is required to assess the full impact to ratepayers.

FISCAL IMPACT:

This bill expands the NEM program to increase the capacity of an eligible fuel cell generating facility from one megawatt to no more than three megawatts. This change results in an expansion of the net energy metering programs, and would need a Commission order or decision to implement it. The ALJ Division would be required to open a proceeding or include the expansion of the NEM program into a petition to modify. A proceeding to expand the NEM petition could be incorporated into an existing proceeding.

ECONOMIC IMPACT:

[4] In 2010, E3, Inc. completed a study a cost-benefit study on the full-retail NEM Program for the Commission (available here: http://cpuc.ca.gov/PUC/energy/DistGen/nem_eval.htm). E3, Inc. is currently in the process updating the cost-benefit study of the full-retail NEM Program to be completed in 2013. Details on the 2013 NEM cost-benefit study can be found here: http://cpuc.ca.gov/PUC/energy/Solar/nem_cost_benefit_evaluation.htm).

This bill may have a positive impact on economic activity with benefits accruing mainly to several fuel cell developers in the State. Receiving NEM for larger fuel cell installations would potentially improve project economics enough to result in additional installations.

LEGAL IMPACT:

Not applicable.

LEGISLATIVE HISTORY:

The NEM statute has been modified numerous times in the past decade. It was first established in response to AB 656 (1996), and subsequently modified by: AB 1755 (1998), AB 918 (2000), AB X1-29 (2001), SB 1038 (2002), AB 2228 (2003), AB 1214 (2004), AB 920 (2009), AB 510 (2010), SB 489 (2011), and AB 2165 (2012).

PROGRAM BACKGROUND:

NEM is an electricity tariff billing mechanism whose intent is to facilitate the installation of DG by offering retail-rate and generation-rate billing credits for any electricity exported to the grid at times when there is no simultaneous energy demand to utilize the generation onsite.

Under existing complementary state laws, the CPUC oversees a range of policies that support self-generation:

1. Rebates: Rebates through the California Solar Initiative (CSI) and SGIP. The CSI program provides rebates for solar PV systems up to 1 MW (and allows systems up to 5 MW), with the exception of certain state-owned facilities (per AB 2724, 2010). SGIP provides incentives to wind turbines, fuel cells, gas turbines, micro-turbines and internal combustion engines, waste heat capture, small conduit hydro, combined heat and power, advanced energy storage, and pressure reduction turbines. Similar to NEM, the SGIP and CSI programs are designed to reduce a customer's onsite load.
2. Simplified Interconnection: Reduced interconnection costs are available under utility Rule 21 tariffs that exempt self-generation renewable energy systems under 1 MW from most studies and fees. Rule 21 also offers these systems accelerated interconnection timelines. Separately, the CPUC exempted renewable self-generation systems from standby charges in 2003.
3. Net Energy Metering: Per PU Code 2827, NEM customer-generators who take service from IOUs have their monthly net generation valued at the full retail rate at the time the energy is exported, and may elect to receive compensation of any net surplus generation above annual load.5 PU Code 2827.10 sets out a separate program for eligible fuel cell customer-generators that have their monthly net generation valued at the generation rate only. An installed NEM project provides a subsidy to the customer-generator that, under current law,

lasts for the lifetime of the installation. This subsidy will be of increasing importance to new customer-generators as CSI and SGIP incentives decline.

OTHER STATES' INFORMATION:

NEM is currently available in 44 states around the country. Each state has its own version of NEM, including customer, technology, and system size eligibility terms; in numerous states NEM is available for larger projects and other technologies (See www.freeingthegrid.org for a guide to the differences among state net metering policies).

SUMMARY OF SUPPORTING ARGUMENTS FOR RECOMMENDATION:

This bill should be supported if amended for the following reason:

(1) All NEM projects are exempted from paying interconnection costs. Increasing the size-cap of fuel cell projects taking fuel cell NEM tariff to 3 MW may increase the risk of higher interconnection costs that are borne by non-participants.

SUMMARY OF SUGGESTED AMENDMENTS:

This bill should be amended in the following way:

(1) Remove the exemption from interconnection costs for NEM-participating fuel cell projects over 1 MW.

STATUS:

AB 1228 is pending hearing in the Assembly Utilities and Commerce Committee.

SUPPORT/OPPOSITION:

None yet.

VOTES:

None yet.

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BILL LANGUAGE:

BILL NUMBER: AB 1228 INTRODUCED
BILL TEXT

INTRODUCED BY Assembly Member V. Manuel Pérez

FEBRUARY 22, 2013

An act to amend Section 2827.10 of the Public Utilities Code, relating to electricity.

LEGISLATIVE COUNSEL'S DIGEST

AB 1228, as introduced, V. Manuel Pérez. Electricity: eligible fuel cell customer-generators.

Existing law establishes a net energy metering program that is available to an eligible fuel cell customer-generator, which is defined as a customer of an electrical corporation and, among other things, uses a fuel cell electrical generating facility with capacity of not more than one megawatt. Existing law requires that the net metering calculation be made by measuring the difference between the electricity supplied to the eligible fuel cell customer-generator and the electricity generated by the eligible fuel cell customer-generator and fed back to the electrical grid over a 12-month period. Existing law requires that an electrical corporation determine if the eligible fuel cell customer-generator was a net consumer or producer of electricity during the 12-month period. For purposes of making this determination, existing law requires that the electrical corporation aggregate the electrical load of the eligible fuel cell customer-generator under the same ownership.

This bill would increase the capacity of a fuel cell electrical generating facility to not more than 3 megawatts.

Because the bill would require an expansion of the above-described net energy metering programs and would require an order or decision of the commission to implement, a violation of which is a crime, these provisions would impose a state-mandated local program by expanding the definition of a crime.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 2827.10 of the Public Utilities Code is amended to read:

2827.10. (a) As used in this section, the following terms have the following meanings:

(1) "Electrical corporation" means an electrical corporation, as defined in Section 218.

(2) "Eligible fuel cell electrical generating facility" means a facility that includes the following:

(A) Integrated powerplant systems containing a stack, tubular array, or other functionally similar configuration used to electrochemically convert fuel to electric energy.

(B) An inverter and fuel processing system where necessary.

(C) Other plant equipment, including heat recovery equipment, necessary to support the plant's operation or its energy conversion.

(3) (A) "Eligible fuel cell customer-generator" means a customer of an electrical corporation that meets all the following criteria:

(i) Uses a fuel cell electrical generating facility with a capacity of not more than ~~one megawatt~~ *three megawatts* that is located on or adjacent to the customer's owned, leased, or rented premises, is interconnected and operates in parallel with the electrical grid while the grid is operational or in a grid independent mode when the grid is nonoperational, and is sized to offset part or all of the eligible fuel cell customer-generator's own electrical requirements.

(ii) Is the recipient of local, state, or federal funds, or who self-finances projects designed to encourage the development of eligible fuel cell electrical generating facilities.

(iii) Uses technology the commission has determined will achieve reductions in emissions of greenhouse gases pursuant to subdivision (b), and meets the emission requirements for eligibility for funding set forth in subdivision (c), of Section 379.6.

(B) For purposes of this paragraph, a person or entity is a customer of the electrical corporation if the customer is physically located within the service territory of the electrical corporation and receives bundled service, distribution service, or transmission service from the electrical corporation.

(4) "Net energy metering" means measuring the difference between the electricity supplied through the electrical grid and the difference between the electricity generated by an eligible fuel cell electrical generating facility and fed back to the electrical grid over a 12-month period as described in subdivision (e). Net energy metering shall be accomplished using a time-of-use meter capable of registering the flow of electricity in two directions. If the existing electrical meter of an eligible fuel cell customer-generator is not capable of measuring the flow of electricity in two directions, the eligible fuel cell customer-generator shall be responsible for all expenses involved in purchasing and installing a meter that is able to measure electricity flow in two directions. If an additional meter or meters are installed, the net energy metering calculation shall yield a result identical to that of a time-of-use meter.

(b) (1) Every electrical corporation, not later than March 1, 2004, shall file with the commission a standard tariff providing for net energy metering for eligible fuel cell customer-generators, consistent with this section. Subject to the limitation in subdivision (f), every electrical corporation shall make this tariff available to eligible fuel cell customer-generators upon request, on a first-come-first-served basis, until the total cumulative rated

generating capacity of the eligible fuel cell electrical generating facilities receiving service pursuant to the tariff reaches a level equal to its proportionate share of a statewide limitation of 500 megawatts cumulative rated generation capacity served under this section. The proportionate share shall be calculated based on the ratio of the electrical corporation's peak demand compared to the total statewide peak demand.

(2) To continue the growth of the market for onsite electric generation using fuel cells, the commission may review and incrementally raise the limitation established in paragraph (1) on the total cumulative rated generating capacity of the eligible fuel cell electrical generating facilities receiving service pursuant to the tariff in paragraph (1).

(c) In determining the eligibility for the cumulative rated generating capacity within an electrical corporation's service territory, preference shall be given to facilities that, at the time of installation, are located in a community with significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, or both, based on the ambient air quality standards established pursuant to Section 39607 of the Health and Safety Code.

(d) (1) Each net energy metering contract or tariff shall be identical, with respect to rate structure, all retail rate components, and any monthly charges, to the contract or tariff to which the customer would be assigned if the customer was not an eligible fuel cell customer-generator. Any new or additional demand charge, standby charge, customer charge, minimum monthly charge, interconnection charge, or other charge that would increase an eligible fuel cell customer-generator's costs beyond those of other customers in the rate class to which the eligible fuel cell customer-generator would otherwise be assigned are contrary to the intent of the Legislature in enacting this section, and may not form a part of net energy metering tariffs.

(2) The commission shall authorize an electrical corporation to charge a fuel cell customer-generator a fee based on the cost to the utility associated with providing interconnection inspection services for that fuel cell customer-generator.

(e) The net metering calculation shall be made by measuring the difference between the electricity supplied to the eligible fuel cell customer-generator and the electricity generated by the eligible fuel cell customer-generator and fed back to the electrical grid over a 12-month period. The following rules shall apply to the annualized metering calculation:

(1) The eligible fuel cell customer-generator shall, at the end of each 12-month period following the date of final interconnection of the eligible fuel cell electrical generating facility with an electrical corporation, and at each anniversary date thereafter, be billed for electricity used during that period. The electrical corporation shall determine if the eligible fuel cell customer-generator was a net consumer or a net producer of electricity during that period. For purposes of determining if the eligible fuel cell customer-generator was a net consumer or a net producer of electricity during that period, the electrical corporation shall aggregate the electrical load of the meters located on the property where the eligible fuel cell electrical generation

facility is located and on all property adjacent or contiguous to the property on which the facility is located, if those properties are solely owned, leased, or rented by the eligible fuel cell customer-generator. Each aggregated account shall be billed and measured according to a time-of-use rate schedule.

(2) At the end of each 12-month period, where the electricity supplied during the period by the electrical corporation exceeds the electricity generated by the eligible fuel cell customer-generator during that same period, the eligible fuel cell customer-generator is a net electricity consumer and the electrical corporation shall be owed compensation for the eligible fuel cell customer-generator's net kilowatthour consumption over that same period. The compensation owed for the eligible fuel cell customer-generator's consumption shall be calculated as follows:

(A) The generation charges for any net monthly consumption of electricity shall be calculated according to the terms of the tariff to which the same customer would be assigned to or be eligible for if the customer was not an eligible fuel cell customer-generator. When the eligible fuel cell customer-generator is a net generator during any discrete time-of-use period, the net kilowatthours produced shall be valued at the same price per kilowatthour as the electrical corporation would charge for retail kilowatthour sales for generation, exclusive of any surcharges, during that same time-of-use period. If the eligible fuel cell customer-generator's time-of-use electrical meter is unable to measure the flow of electricity in two directions, paragraph (4) of subdivision (a) shall apply. All other charges, other than generation charges, shall be calculated in accordance with the eligible fuel cell customer-generator's applicable tariff and based on the total kilowatthours delivered by the electrical corporation to the eligible fuel cell customer-generator. To the extent that charges for transmission and distribution services are recovered through demand charges in any particular month, no standby reservation charges shall apply in that monthly billing cycle.

(B) The net balance of moneys owed shall be paid in accordance with the electrical corporation's normal billing cycle.

(3) At the end of each 12-month period, where the electricity generated by the eligible fuel cell customer-generator during the 12-month period exceeds the electricity supplied by the electrical corporation during that same period, the eligible fuel cell customer-generator is a net electricity producer and the electrical corporation shall retain any excess kilowatthours generated during the prior 12-month period. The eligible fuel cell customer-generator shall not be owed any compensation for those excess kilowatthours.

(4) If an eligible fuel cell customer-generator terminates service with the electrical corporation, the electrical corporation shall reconcile the eligible fuel cell customer-generator's consumption and production of electricity during any 12-month period.

(f) No fuel cell electrical generating facility shall be eligible for the tariff unless it commences operation prior to January 1, 2015, unless a later enacted statute, that is chaptered before January 1, 2015, extends this eligibility commencement date. The tariff shall remain in effect for an eligible fuel cell electrical generating facility that commences operation pursuant to the tariff prior to January 1, 2015. A fuel cell customer-generator shall be eligible for the tariff established pursuant to this section only for

the operating life of the eligible fuel cell electrical generating facility.

SEC. 2. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.